

ISO 50001:2018

Energy Management Systems Documentation

Energy Manual / Documented Information

Document No. EnMS-002

Street Address

City, State, Zip

Tel,

Cell Phone:

Email:

Web Site:

Instructions:

This manual is used as a template in developing your ISO 50001:2018 Energy Management Systems.

- Methods and systems used in the development and operation of the EnMS vary widely from company to company.
- The blue text and suggestions displayed in the manual are intended to offer some options and to highlight the areas that need attention / update / replacement.
- Review the text and suggestions and at a minimum replace or update them to reflect the unique / customized information of your energy system requirements.
- Delete the blue text after each task is completed.
- Use replace function – enter “Your Company” in find space, enter your company name in replace space – system should make changes throughout the entire document.
- Additional details and instructions in the use of the EnMS-002 manual template is included in a separate file “EnMS-Template-Instructions”.

Additional documentation review.

- Similarly, the blue text and suggestions displayed in the EnMS documentation (that will follow) for the procedures, instructions, attachments, forms, and flow diagrams are intended to offer some options and to highlight the areas that require update or replacement.

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Introduction

Section A a. Scope of the Energy Management System

Section B References

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Section C Documented Information

a. Distribution Control List

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d. Organization Chart

e. Company Background

f. Process Flow Diagram

Section D List of Documented Information for clauses 4 through 10

Clause 4 Context of the Organization

Clause 5 Leadership

Clause 6 Planning

Clause 7 Support

Clause 8 Operation

Clause 9 Performance Evaluation

Clause 10 Improvement

Section E Records Documentation Matrix

Energy Objectives, Targets and Action Plans

1.0 Purpose/Scope

- 1.1 The purpose of this procedure is to describe the process of setting the energy objectives and targets at relevant functions and levels in **Your Company**.
- 1.2 This procedure provides for the development of the energy programs required to achieve the objectives and targets and outlines the process for developing action plans for the identified energy programs.

2.0 Responsibilities and Authorities

- 2.1 The **Energy management team leader** has the prime responsibility and approval authority for this procedure.
- 2.2 The **Energy management team leader** in consultation with the **Energy management team** is responsible to coordinate activities associated with the implementation and the maintenance of this procedure covering the energy objectives, targets and action plans.
- 2.3 Additional responsibilities for other personnel are detailed in relevant paragraphs of section 5.0 below.

3.0 References and Definitions

- 3.1 This document addresses clause 6.2 of the ISO 50001:2018 standard, covering objectives and targets.

4.0 Resources

- 4.1 None

5.0 Instructions

- 5.1 By setting objectives and targets at the relevant functions, levels, processes and facilities, **Your Company** can focus its efforts and resources on areas of greatest energy impact and/or greatest concern to internal and/or external stakeholders.
- 5.2 Objectives and targets are consistent with the energy policy. They are measurable, monitored, communicated and updated as needed.
 - 5.2.1 The objectives and targets become the drivers for the improvement in energy performance and consider legal and other applicable requirements, SEUs-significant energy uses, and energy improvement opportunities identified with the energy review.
 - 5.2.2 The energy objectives planning record, form F-620-001 is used to establish and document the objectives and targets. The form is a multi-section form where:
 - **Section 1** is used to restate the company's energy policy (as detailed in attachment A-520-001).
 - **Section 2** describes the primary objective(s) consistent with and as outlined in the energy policy.
 - **Section 3** describes the general objectives as identified in support of the primary objectives

1.0 Purpose/Scope

- 1.1 This procedure describes the process for internal and external communication regarding energy management at [Your Company](#)
- 1.2 The procedure applies to personnel whose work affects energy performance and the EnMS.

2.0 Responsibilities and Authorities

- 2.1 The [Energy management team leader](#) has the prime responsibility and approval authority for this procedure.
- 2.2 Additional responsibilities for the [Energy management team leader, the human resources staff, the supervisors, and employees](#) are detailed in relevant paragraphs of section 5.0 below.

3.0 References and Definitions

- 3.1 This document relates to clause 7.4 of the of the ISO 50001:2018 standard, covering communication.

4.0 Resources

- 4.1 None

5.0 Instructions

- 5.1 In support of the procedure P-720 for Competence, awareness, and training the [Energy management team](#) determines the method(s) for internal and external communication of energy matters.

- 5.1.1 The internal communication of dependable information is consistent with that generated with the EnMS and is provided through:

- Publication of the Energy policy, A-520-001,
- Communication of the Organization chart, A-530-001,
- Overview of the P-D-C-A, plan-do-check-act approach to continual improvement with guidelines, A-600-001.
- Overview of the Risk-based-thinking approach to improvement with the Risk and opportunities worksheet, form F-610-001.
- Overview of the process approach and risk-based thinking,
- Issue and access of the EnMS Manual, Procedures and Instructions as controlled documents, with the procedure P-750,
- Overview of the procedures & instructions, and the forms & attachments with Master documentation lists, F-750-003,
- Employee comment / suggestions (per par 5.1.2 below),
- [Daily production schedules/sheets,](#)
- [Crew meetings,](#)

INSERT YOUR COMPANY LOGO/NAME HERE

F-750-005
Document Change Request

Document Title:	Document Number:
------------------------	-------------------------

Requestor: _____ Date Requested: _____

Change Requested: *Attach copy of document page with changes indicated.*

Reason for Change:

Approver Comments:

Change Approved: Yes
 No

If yes, is training required? Yes No
Individual Training
Group Training

Training Notes:

Authorized Staff Signature *(Principal signature(s) needed for procedures)*

Energy Management Team Leader

Date

Date

SAMPLE

INSERT YOUR COMPANY LOGO/NAME HERE

F-1010-001

Corrective Action Request - CAR

CA IA

(Check appropriate box to indicate Corrective Action or Improvement Action)

Corrective Action # _____ or Improvement Action # _____ Date: _____

	Date Due	By/Assigned to	Completed Initials & Date
Investigation			
Implementation			
Audit			
CAR closed			

Description of Issue

SAMPLE

Investigation Finding / Root Cause

WI-620-002 Example – ACTION PLAN & PROJECT TIMING CHART - DEVELOPMENT OF ENERGY PROGRAM		
COMMITMENT and POLICY	PLANNING	PROCESS
Energy Policy Commitment 1	Program Instruction WI-620-002	Conserve Energy Resources
Reduce energy use per unit of production by 20% in 5 years in manufacturing operations.	Objective 1	Achieve increased energy awareness for contractors.
	Target 1	Provide energy awareness training to all contractors – to be completed in 5 months.
	Energy Program	Energy awareness
Date started:	Action	Human resources, Technical services and Purchasing departments to set up relevant training programs.
PROGRAM – ACTION PLAN PROJECT: _____ LEADER: _____		
Action Plan is relevant to objectives as defined in the Energy Planning record, F-620-001:		
Primary Objectives: _____	General Objectives: X	Energy review Objectives: _____
Legal and Other Requirements: _____	Relevant Functions: _____	Other: _____
Other Action Plan Considerations:		
Are there financial requirements associated with this objective? ___ No, X Yes Training resources are required		
Is funding available? ___ No, X Yes Funds allocated in training budget		
Are there business and operational conditions relevant to this objective? ___ No, ___ Yes Not applicable		
Are the views of interested parties considered? ___ No, ___ Yes _____		
Are there feasible technological options available for this objective? ___ No, ___ Yes _____		
Are there alternative energy sources available for use for this objective? ___ No, ___ Yes _____		
Will operational controls be needed? ___ No, ___ Yes _____, _____, _____		
Will an EnPI be used to report on this objective / target(s)? ___ No, ___ Yes, If yes what is the EnPI metrics? _____		

GUIDELINES FOR ASSESSING ENERGY SIGNIFICANCE	Date Approved:	DATA Form A-630-001
-----------------------------------------------------	----------------	---------------------

With reference to **Column 4 of the Energy Assessment Worksheet**, F-630-001 a simplest method of assessing / quantifying the significance of energy use / consumption is to use the letters **H or M or L** to indicate whether the Severity and Occurrence are high or medium or low.

H = High

M = Medium

L = Low

In general:

When both Severity and Occurrence are High, the energy use is significant, and the process step requires improvement action

When one or both the severity and the likelihood are indicated as medium, additional reviews are required to identify existing conditions that reduce or eliminate the energy use.

Below is a method to quantify the energy assessment.

S = Severity of the Outcome

High = 10, 9, 8

Medium = 7, 6, 5, 4

Low = 3, 2, 1

L = Likelihood of the Occurrence

High = 10, 9, 8

Medium = 7, 6, 5, 4

Low = 3, 2, 1

(L x S) = Significance of energy use,

High = 100 to 50 range

Medium = 49 to 16 range

Low = 15 to 1 range

Significance of Use and Consumption

A variation in the method to analyze the Severity and Likelihood and assess the significance or energy performance associated with the process step.

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ISO 50001:2018

Employee Training Overview



Trainer Guide

Includes Trainer's Guide with speaker's notes



ISO 50001 EMPLOYEE TRAINING

"It is Everyone's Job to Conserve Energy"

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Every employee in your company has an important role to play in the Energy Management System (EnMS).

You are participating in this training to learn the basics of this management system, and what it means to be ISO 50001 registered and how it will affect your job.

SECTION 1 - FUNDAMENTALS

- Who is ISO?
- What is a Management System?
- P-D-C-A Continual Improvement Cycle
- Process approach
- Risk-Based Thinking

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Let's start with some fundamentals.

WHAT IS PDCA?

P-D-C-A is applied in ISO 50001

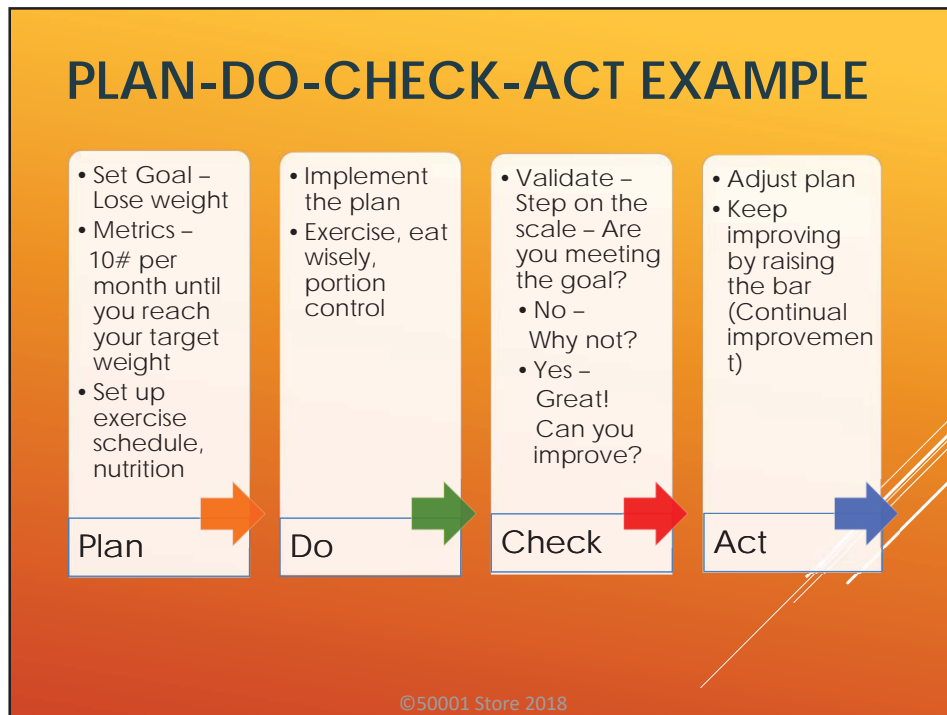


The Plan-Do-Check-Act Cycle – An Approach for
Continual Improvement

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ISO management systems use some common formats to keep them simple.
One is the Plan-Do-Check-Act (P-D-C-A), a continual improvement approach.

PLAN-DO-CHECK-ACT EXAMPLE



You could consider a diet an example of a “Nutritional Management System”.

This is basic, common sense, put into practice.

In this example, there are very common ideas for each of the Plan Do Check Act components.

Sometimes the best solutions are not too complicated, and much more likely to be effective if you have a structured plan in place.

Continual improvement keeps your momentum going and helps you improve your goal.

If you don't improve, you may stop putting in the effort and will ultimately fall backwards.

Student Guide included with space for notes

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ISO 50001 EMPLOYEE TRAINING

"It is Everyone's Job to Conserve Energy"

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TOPICS COVERED

1. Fundamentals	2. Basics of an EnMS and ISO 50001	3. Establishing your EnMS	4. Managing the ISO 50001 EnMS
<ul style="list-style-type: none">• Who is ISO?• What is a Management System?• Plan Do Check Act• Process approach• Risk Based Thinking	<ul style="list-style-type: none">• What is EnMS?• What is ISO 50001?• Benefits of certification• ISO 50001 registration	<ul style="list-style-type: none">• Action to address risks and opportunities• Legal requirements• Objective, energy targets and programs• Requirements	<ul style="list-style-type: none">• Key elements of an ISO 50001 EnMS

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SECTION 1 - FUNDAMENTALS

- Who is ISO?
- What is a Management System?
- P-D-C-A Continual Improvement Cycle
- Process approach
- Risk-Based Thinking

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**THE REQUIREMENTS
OF ISO 50001:2018**

SAMPLE

82 page PowerPoint Presentation

TOPICS / QUESTIONS COVERED

- What is ISO 50001?
- What is needed for registration to ISO 50001?
- What are the requirements of ISO 50001:2018?
 - Section 4 - Context of the Organization
 - Section 5 - Leadership
 - Section 6 - Planning
 - Section 7 - Support
 - Section 8 - Operation
 - Section 9 - Performance Evaluation
 - Section 10 - Improvement
- What are the next steps?

WHAT IS A MANAGEMENT SYSTEM?

Your organization is made up of several Management Systems, which operate within your overall Business Management System. Example:

- Financial (FMS)
- Quality (QMS)
- Environmental (EMS)
- Safety (SMS)
- **Energy (EnMS)**
- IT (MIS) etc.





Requirements
of
ISO 50001:2018

SAMPLE

88 page Trainer's Guide

Trainer's Guide



This training is aimed at "Understanding the Requirements of an Energy Management System (EnMS)".

It is a Clause-by-Clause explanation of ISO 50001:2018, the International Standard for Energy Management Systems.

Trainer's Guide including speaker's notes



The requirements of ISO 50001:2018 are described in 7 clauses or sections

Section 4 - Context of the Organization

Section 5 – Leadership

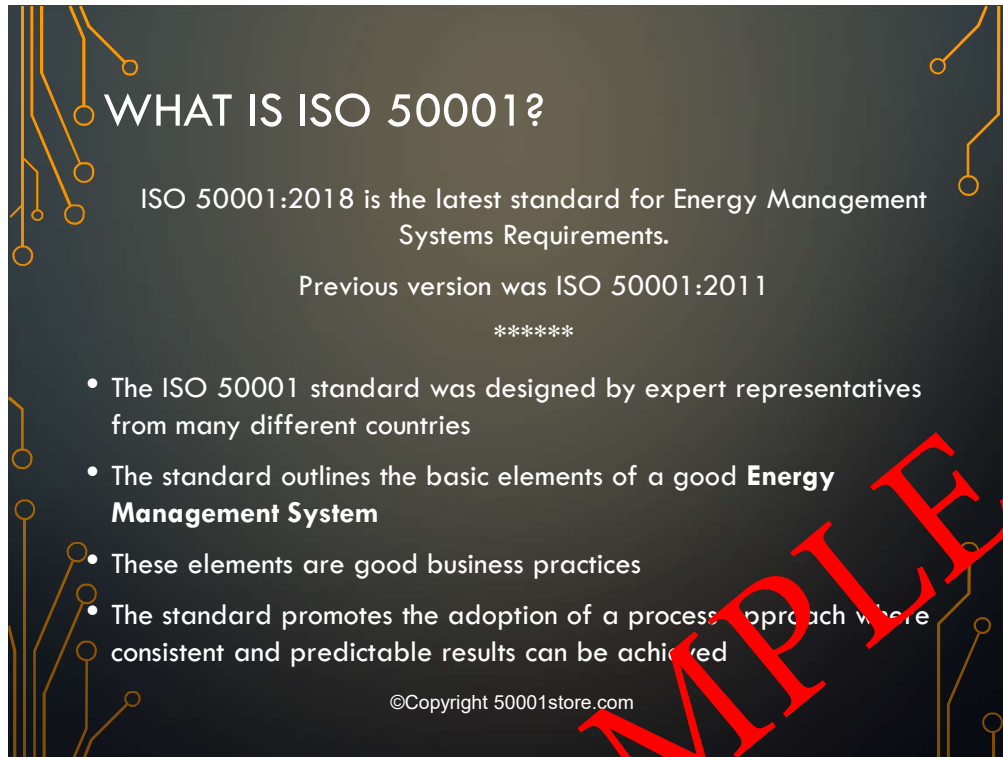
Section 6 - Planning

Section 7 - Support

Section 8 - Operation

Section 9 - Performance Evaluation

Section 10 -Improvement



The International Standardization Organization (ISO) has representatives from some 180 member countries that make up a Technical Advisory Group (TAG).

These groups draft the standard, then members comment and vote on the standard.

The document then becomes an ISO standard.

These standards are not regulations.

They are a method of getting a standard set of criteria for Energy Management Systems.

An outside agency, the registrar, will then audit to see if you have all the required elements in place. If you do, you will get ISO 50001 registration.

This registration tells others all over the world that you have an energy management system in place.

As we go through the presentation and cover the requirements you will see that these requirements are basically just good business practice that conserve energy and improve your energy performance.



Requirements
of
ISO 50001:2018

SAMPLE

34 page Student Guide

Student's Guide

Student's Guide includes space for notes

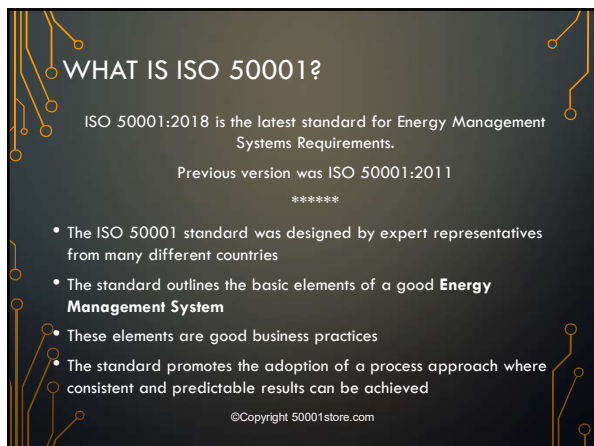


1



2

SAMPLE



3

Includes two quizzes

31. An energy data collection plan must be defined and implemented and specify the data necessary to monitor key characteristics.	T Clause:	F Clause:
32. The EnMS does not have to continually improve its suitability, adequacy, and effectiveness,	F Clause:	F Clause:

Find the Requirement:

	Clause:
1. Establish an energy policy that includes a commitment to ensure the availability of information and the resources required to achieve objectives and energy targets.	
2. Establish and continually improve the energy management system (EnMS) that includes the processes needed and their interactions.	
3. Understand and consider the external and internal issues, the requirements of interested parties, and the relevant legal requirements relative to energy efficiency, energy use and consumption when determining the scope of the EnMS.	
4. Maintain a process to access legal and other requirements that relate to energy efficiency, energy use and consumption.	
5. Top management demonstrates commitment with respect to the EnMS by ensuring that the energy policy, objectives and energy targets are established and are compatible with the strategic direction.	
6. Documented information required by the EnMS and by the ISO 50001 standard is controlled to ensure that it is available for use where and when it is needed.	
7. Retain as documented information, the suggested improvements made by personnel doing work under the control of the company.	
8. Control documented information to ensure that it is adequately protected such as from loss of confidentiality, improper use or loss of integrity.	
9. Maintain as documented information the methods and criteria used to develop the energy review.	
10. Determine the risks and opportunities that need to be addressed to give assurance the EnMS can achieve intended results, prevent or reduce undesired effects, and achieve continual improvement.	
11. Consider how the actions to achieve objectives and energy targets can be integrated in the business processes.	
12. Ensure that persons whose work affects the performance of the EnMS are competent based on education, training, or experience.	
13. Maintain as documented information the methods and criteria used to develop the energy review.	
14. When available data indicates that relevant variables significantly affect energy performance, consider such data in establishing EnPIs.	
15. When available data indicated that relevant variables significantly	

INSERT COMPANY NAME/LOGO HERE

ISO 50001:2018 Energy Management Systems – The Internal Audit Checklist

This checklist is based on the information provided in the ISO 50001:2018 international standard. The checklist is best used by trained and practicing auditors to evaluate or assess the Energy Management System (EnMS) requirements based on the standard. You will see questions on the checklist that refer to the standard and for each clause provisions are made for additional questions.

The auditors are expected to keep in mind that the standard does not require mandatory procedures for the various system processes; however, the auditors will expect documented information to be available because in the clauses of the standard, the phrase such as 'documented procedures' is used to specify that a process, a method, a system, a work instruction, or an arrangement be documented.

The auditors must use a great deal of discretion and therefore must be careful and thoughtful prior to establishing a deficiency against a requirement. Evidence for visible top management leadership, commitment and energy management action must be looked for.

The **bold** numbers and titles used in the first two columns of the checklist indicate the "Requirements" and may be referred to on nonconformity reports prepared by the auditor.

During assessment of each requirement, auditors record the status of the evaluation by indicating in the right-hand column a

Yes - for Acceptable Condition or **No** - for Deficient Condition

---	ENERGY MANAGEMENT SYSTEMS REQUIREMENTS	OBSERVATIONS / COMMENTS	STATUS
4	CONTEXT OF THE ORGANIZATION		
4.1	Understanding the organization and its context		
	As an organization, does your company determine external and internal issues that are relevant to your purpose?		
	Do you consider the relevant issues that affect your ability to achieve the intended outcomes of the Energy Management System (EnMS)?		

INSERT COMPANY NAME/LOGO HERE

ISO 50001:2018 Energy Management Systems – The Internal Audit Checklist

	Additional Questions		
4.2	Understanding the needs and expectations of interested parties		
	Has your company determined:		
	<ul style="list-style-type: none"> • The interested parties that are relevant to the EnMS and to energy performance? 		
	<ul style="list-style-type: none"> • The relevant requirements (needs and expectations) of the interested parties? 		
	<ul style="list-style-type: none"> • Which of the needs and expectations become applicable legal requirements & other requirements? 		
	Has your company:		
	<ul style="list-style-type: none"> • Ensured that it has access to the applicable legal requirements and other requirements related to energy efficiency, energy use and energy consumption? 		
	<ul style="list-style-type: none"> • Determine how these requirements apply to energy efficiency, energy use and energy consumption? 		
	<ul style="list-style-type: none"> • Ensured that the requirements are considered? 		
	<ul style="list-style-type: none"> • Reviewed legal requirements and other requirements at defined intervals? 		
	With reference to the note in 4.2:		

INSERT COMPANY NAME/LOGO HERE

ISO 50001:2018 Energy Management Systems – The Internal Audit Checklist

	<ul style="list-style-type: none"> For additional information on compliance management do you refer to ISO 19600? 		
	Additional Questions		
4.3	Determining the scope of the energy management system		
	To establish the scope of the EnMS, does your company determine its boundaries and applicability?		
	When determining the scope of the EnMS, do you consider the:		
	<ul style="list-style-type: none"> The external and internal issues per above 4.1? 		
	<ul style="list-style-type: none"> The relevant interested parties per above 4.2? 		
	Does your company ensure that it has the authority to control its energy efficiency, energy use and energy consumption within the scope and boundaries?		
	<ul style="list-style-type: none"> Within the scope and boundaries, are all energy types included? 		
	Is the scope of the EnMS maintained as documented information?		
	Additional Questions		
4.4	Energy management system		

INSERT COMPANY NAME/LOGO HERE

ISO 50001:2018 Energy Management Systems – The Internal Audit Checklist

	Do you have the latest document for ISO 50001:2018?		
	<ul style="list-style-type: none"> As required by the ISO 50001 standard, do you establish, document, implement, maintain, and continually improve the EnMS? 		
	<ul style="list-style-type: none"> Does your company determine the processes needed for the EnMS, their interactions and applications? 		
	With reference to the note in 4.4:		
	<ul style="list-style-type: none"> Do you recognize that the needed processes can differ from one company to another because of the size of organization, the type of activities, processes, products and services, the complexity of processes and their interactions, and the competence of the personnel? 		
	Additional Questions		
5	LEADERSHIP		
5.1	Leadership and commitment		
	Does the top management demonstrate leadership and commitment with respect to the EnMS by:		
	<ul style="list-style-type: none"> Ensuring that the EnMS scope and boundaries are established? 		

Sample

Welcome to ISO 50001:2018

Our Company is working on becoming ISO 50001:2018 registered. This international standard provides for an Energy Management System that outlines some good basic business practices that we need to have in place. By implementing an Energy Management System (EnMS) that complies with the international standard, we will be able to do our part in improving energy performance for our company.

Why does our company want to become ISO 50001 registered?

The main reason is that it is the right thing to do! All of us want to do our part in having our company conserve as much as possible the energy that is available and needed to operate our business and where the waste of energy is eliminated or at least reduced. Not only do we want to be good energy stewards, we want to improve our energy performance as an organization. An important benefit is that we will be able to maintain our position in the market place because more and more customers and countries are becoming energy conscious and are requiring that suppliers show proof of sound energy commitment and management.

What will employees need to do for the ISO 50001:2018 Energy Management System?

First, management will be looking at our company's activities and processes. They will be performing assessments to identify the significant energy uses and determine how they affect energy performance. They will then determine the actions needed to address the energy risks and the opportunities and control

the processes to make sure we continually improve our activities. Controlling the processes means documenting the procedures and work instructions, training employees and finding ways to make sure that the activities are done consistently no matter who is involved.

This means that employees may be required to have specialized training, or to follow specific work instructions. Employees will need to be aware that "It is Everyone's Job to Conserve Energy".

ISO 50001:2018 Highlights: Things that you will be hearing about as we proceed with this project....

Our Energy Policy

We will identify our Energy Policy and will be communicating it to all in our company. It is important that all of us are aware of what this statement says about what our company's vision is for meeting energy commitments.

Registration Audit

To become ISO 50001:2018 registered, we will be audited by a registration company. This will happen after we have set up the systems to meet all the requirements of the standard.

The 'Registrar' will send an auditor or audit team to our facilities and evaluate the energy system we have in place. They will check to see if the system meets the requirements of the standard and see if we follow our processes. If everything looks good, we will be recommended for registration and be awarded a certificate and be recognized globally!

Watch for our next newsletter for more introduction to ISO 50001:2018, what it will mean to you and your coworkers.